**RECOMMENDATIONS OF THE**
**PEST MANAGEMENT IN THE 21ST CENTURY WORKING GROUP**

**BACKGROUND:** In March 2005, the Director of the Department of Pesticide Regulation (DPR) convened the "Pest Management in the 21st Century" working group (working group) to develop strategic recommendations to help the Department "best utilize its resources and talents over the next decade to achieve its mission, goals and objectives in California's rapidly changing demographic landscape." The working group is part of the Department's Pest Management Advisory Committee (PMAC). Member selection was based on expertise, knowledge, background diversity and the willingness to consider solutions beyond traditional perspectives held by the constituencies they represent.

The Director provided the following considerations:

- Look beyond the agricultural setting and take into account an increasingly urban, culturally diverse, consumer-oriented state.
- Balance environmental protection and economic viability while ensuring social equity.
- Identify voluntary, incentive-based opportunities to further the implementation of Integrated Pest Management (IPM) strategies, both in agricultural and non-agricultural settings.
- Identify performance-based approaches to measure DPR's accomplishments.

The working group adopted the following goals to guide its efforts:

- Sustainable Pest Management: Promote pest management practices that are environmentally sound, economically viable and socially responsible.
- Integrated Pest Management (IPM): Increase the use of IPM strategies that combine biological, cultural, physical and chemical tools in a way that meets the pest management objectives, is economically feasible, and minimizes risks to human health, safety, and the environment.

- Safe Food Supply: Ensure that Californians' food supply, whether produced within or outside the state, meets state safety standards for pesticide residues through a robust monitoring and enforcement program.
- Research and Extension: Promote cooperation between private, academic and government sectors to advance applied research and extension services.
- Education and Awareness: Advance education and communication programs that promote sustainable pest management options for professional practitioners, institutional users, and the public-at-large.

The working group did not attempt to comprehensively review all of DPR's programs. Instead the working group identified two programmatic areas that provide significant opportunity to improve DPR's ability to respond to California's rapidly changing pest management needs in a timely, effective and efficient manner. Challenges within those programmatic areas were identified and recommendations developed to address those challenges. The two key programmatic areas are:

(1) Increased emphasis on IPM strategies, including reduced-risk pesticide use, in both the agricultural and urban settings.
(2) Enhanced DPR compliance and enforcement efforts.

The working group also outlined a conceptual strategy for a statewide IPM certification program. As envisioned, it would be a voluntary, incentive-based program that provides economic, marketing, regulatory and administrative benefits to growers and licensees who choose to participate. In return for those benefits, the growers and licensees would agree to adhere to a set of performance-based principles and standards that further contribute to environmental quality, human health and safety. Such an approach would require coordination and cooperation amongst policymakers from various departments and agencies, as well as all appropriate stakeholders.

# 1. Expanding DPR's Integrated Pest Management (IPM) Program[1]

## A. Overarching Challenges and Recommendations

1. Coordinated Statewide Pest Management Program: There is a need for a coordinated statewide pest management policy and program.
   - **Recommendation:** DPR should provide leadership to coordinate state pest management policies and programs, except for vector control and eradication and exclusion projects, in both agricultural and non-agricultural settings.
2. Limited Resources: Current fiscal constraints are limiting the abilities of all state agencies to adequately address pest management concerns.
   - **Recommendation:** Coordinate DPR pest management programs with those of other agencies, industries and organizations to achieve pest management, environmental and human health objectives most efficiently and cost-effectively.
   - **Recommendation:** Pursue partnerships to procure alternative funding sources (e.g. private grants and foundations, federal grant programs), as appropriate, to advance DPR's pest management programs.
   - **Recommendation:** Advance DPR's relationship with the USDA Natural Resources Conservation Service (NRCS) to take full advantage of Farm Bill funding.
3. Legislation: Some recommendations identified below may require legislation.
4. Advance an IPM Strategy: Key strategic components: (1) a vibrant research program that is continually expanding and improving IPM methods; (2) a communications and marketing strategy to educate and promote the IPM

[1] For purposes of these recommendations, Integrated Pest Management (IPM) is defined as a sustainable approach to achieving pest management objectives that combines biological, cultural, physical and chemical pest management tools in a way that minimizes human health, environmental and economic risks. IPM programs should include pest monitoring to determine if pest action threshold have been exceeded and treatments are needed. When pesticides are used, IPM includes a reduced-risk pesticide use decision-making process to select the pesticide and application techniques that achieve the pest management objectives with the least potential impact on human health, non-target organisms and the environment.

program; and (3) resources and incentives to encourage and assist landowners or growers to voluntarily transition to and maintain an IPM program, over time.

- **Recommendation:** Reinvigorate research and extension roles to further implementation of IPM techniques such as pest monitoring. As appropriate, DPR should partner with the private sector, academia, county agricultural commissioners and non-government organizations to promote the use of IPM programs.
- **Recommendation:** Revitalize DPR's IPM and Pest Management Alliance grant programs to promote IPM projects amongst specialized crop and urban groups.
- **Recommendation:** Identify and promote voluntary incentives and mitigate or remove disincentives to encourage investments in IPM strategies. Such incentives could include:
    - (1) Cost Share: Alternative funding mechanisms such as grant programs or bond dollars intended to address water and air quality;
    - (2) Economic Incentives: Reduced regulatory fees, increased tax deductions or accelerated amortization to account for increased costs of modifying pest management operations, reduced workers' compensation rates and liability insurance rates;
    - (3) Regulatory Incentives: Voluntary adoption of Best Management Practices (BMPs) as part of an accepted IPM program could provide opportunities to streamline administrative and/or regulatory requirements, as long as health and environmental quality are not compromised[2].
    - (4) Increased Product Value: Special recognition such as eco-labeling, and market promotion for certification programs.
- **Recommendation:** Include a mandatory, ecologically based IPM component as part of the continuing education requirements for PCAs and other licensees.

[2] For example, a grower implementing BMPs may obtain a permit for an extended period of time beyond what is available to a party who chooses not to implement BMPs. Another example, the fee charged for obtaining a permit may be reduced for a party who agrees to implement BMPs.

- **Recommendation:** Work with organizations such as the Association of Applied IPM Ecologists and the California Association of Pest Control Advisers to develop a pest management advisory program based on advice, recommendations and service as opposed to product sales.
- **Recommendation:** Develop a voluntary IPM certification program for Pest Control Operators and Pest Control Advisors. Include knowledge and performance standards.

5. Expanded Partnerships:

- **Recommendation:** Expand relationships with other agencies, academia, businesses, county agricultural commissioners and the non-government organizations to advance the key components of an IPM strategy.

6. Pesticide Use: Pesticides may be an element of an IPM program. When a landowner, grower or pest management operator determines pesticide use is necessary to achieve specific pest management objectives, she/he should be encouraged to select a pesticide and application techniques that reduce risks to human health, non-target organisms and the environment.

- **Recommendation:** Develop a reduced-risk pesticide use strategy that accelerates the approval of lower-risk pesticides; advances research, development, and use of equipment and application techniques that reduce drift and exposure to pesticides; and disseminate this information among landowners, growers and users.
- **Recommendation:** Encourage development and use of pesticide environmental impact models that evaluate the risks associated with specific formulations of pesticides for human health, non-target organisms and the environment. Such models can help on-the-ground managers decide which pesticide to use to achieve their pest management objectives while reducing the risks to human health, non-target organisms and the environment, and can be applied in both urban and agricultural settings.
- **Recommendation:** Priority should be given to promoting use of reduced-risk pesticides, application techniques, and pest control methods to reduce use of

pesticides that pose the greatest potential immediate and long-term health impacts to pesticide handlers and fieldworkers.

7. Pesticide Registration and Permitting: Some working group members expressed concern that, while alternative chemicals may be considered, little consideration is given to biological and other pest management alternatives during the Section 18(s) and Section 24(c) registration processes.
   - **Recommendation:** DPR should review its Section 18 and Section 24(c) registration processes to ensure that adequate consideration is given alternative pest management approaches.
   - **Recommendation:** DPR should review its restricted materials permitting process to promote more meaningful consideration of alternative pest management approaches.

## B. Challenges and Recommendations in the Urban/Residential Setting

1. Reallocation of Resources: One of the greatest challenges facing DPR is the rapidly expanding urban population and associated increases in urban pest management activities, including increased urban pesticide use. Rapid urbanization is also impacting existing agricultural pest management operations. In the past, DPR has focused most of its resources on regulating agricultural pesticide use. A relatively small percentage of DPR's budget is dedicated to IPM, particularly in the urban setting.
   - **Recommendation:** Reassess the allocation of DPR resources to determine how to adequately address pest management practices in the urban setting. This should include opportunities to expand IPM practices.
2. Advance a Statewide Urban Pest Management Strategy: Shifts in demographics, most notably expanding urbanization, will challenge DPR's priorities and resource allocations. DPR currently does not have a comprehensive urban pest management strategy. Resources are limited for educating urban pesticide users as to the health risks and impacts to the environment associated with their pest management activities. Currently, there is little motivation for urban pesticide users to alter their behavior. For example, economic factors affecting agricultural

pest management decisions do not necessarily apply to urban pesticide users, particularly homeowners.

- **Recommendation:** Use state licensing and county registration processes to educate, in appropriate languages, maintenance gardeners and other licensees on IPM, runoff reduction, and drift prevention.
- **Recommendation:** Identify opportunities to build off existing programs and to work with local, state and federal agencies and the county agricultural commissioners to promote a statewide Urban IPM strategy. Components of such a strategy could include:
    - Multi-lingual education on IPM techniques for targeted audiences at the local level.
    - Partnerships with local media, government, agricultural commissioners, businesses, non-government organizations, the University of California and others to promote IPM programs.
    - Coordination with existing IPM groups.
    - Require point-of-sale information, approved by DPR, on pest management alternatives and proper disposal of unused pesticides.
- **Recommendation:** Evaluate the feasibility of expanding use of pre-formulated pesticide products in the urban setting.
- **Recommendation:** Identify incentives to encourage licensed pest control operators and homeowners to use IPM techniques.

3. Marketing Alternative Pest Management Strategies: Structural Pest Control Board rules limit marketing environmental alternatives.
    - **Recommendation:** Work with Structural Pest Control Board to identify opportunities to promote structural IPM.
4. Retail sales of pesticides
    - **Recommendation:** Review the current registration system and develop additional mechanisms to limit availability of high-risk home-use pesticides.
    - **Recommendation:** Develop retail-level mechanisms to restrict in-store access to high-risk consumer-retail pesticides.

- **Recommendation:** Certify retailers who go above and beyond basic retail efforts for promoting IPM.
- **Recommendation:** Identify opportunities to merge the responsibilities and authority of the Structural Pest Control Board with DPR.

## C. Challenges and Recommendations in the Agriculture-Urban/Residential Interface Setting

1. Rapidly Expanding Agriculture-Urban/Residential Interface: Projections regarding California's population growth over the next two decades indicate a significant increase in the number of people located adjacent to agricultural lands. This could increase the potential for human exposure to some agricultural pesticides and pest management practices.
   - **Recommendation:** Work with the agricultural community to identify opportunities to reduce risk of human exposure to pesticides in the agriculture-urban/residential interface and other adjacent sensitive areas.
   - **Recommendation:** Promote communications between agricultural pest managers and their neighbors to minimize risk of exposure and better understand each other's needs and concerns (e.g. winegrape industry model).
   - **Recommendation:** Promote joint private-public research, outreach, demonstration projects, funding and economic incentives to develop and use alternative pest management practices; and equipment, chemicals and application techniques that reduce risks to human health, safety and the environment.
2. Local Planning: Any effort to address development adjacent to farming operations must go through local planning agencies. Current property values and associated revenue sources for local government (i.e. property taxes) favor development.
   - **Recommendation:** Work with local planning agencies to identify opportunities to address agriculture-urban/residential interface challenges through existing zoning authorities. This may include designing mitigation measures applicable to proposed development adjacent to ongoing agricultural

operations. For example, local planning agencies could impose buffer zones on new development projects adjacent to ongoing agricultural operations to minimize the risk of pesticide exposure to persons entering onto or residing within the new development. The use of such buffer zones would not obviate the need for agriculture to employ IPM and other practices that reduce the risk of drift and exposure or the responsibility to prevent off-site contamination and impacts.

## D. Challenges and Recommendations in the Agricultural Setting

1. Economic Considerations: Competition and global sources for many agricultural crops may limit a grower's ability to absorb additional costs associated with alternative pest management practices.
   - **Recommendation:** DPR, in conjunction with the California Department of Food and Agriculture, should explore possible marketing opportunities (eco-labeling) for growers who utilize alternative pest management techniques (sustainable agriculture programs that have an IPM component).
2. Financial Constraints: External operational constraints (e.g. shipping and lending institution requirements to use pesticides) may limit growers' ability to use alternate pest management practices.
   - **Recommendation:** Determine the degree to which these constraints impede growers' use of alternative pest management practices and develop strategies to address them.
3. Risk**:** Risks are an impediment to adoption of IPM
   - **Recommendation:** Identify opportunities to mitigate risks (actual or perceived) that impede adoption of IPM (e.g. education, training, insurance and tax incentives).

## E. Statewide Voluntary Integrated Pest Management Certification Program

The working group recognized the desirability of a coordinated integrated pest management certification program that incorporates many of the recommendations from the previous sections. While the working group identified some components, discussed below, that may be appropriate, full consideration of such a program is beyond the current working group's charge.

A certified IPM program should recognize the public benefits derived from the use of IPM practices and acknowledge the potential that landowners/growers may incur additional initial costs and face other challenges to implementation. The core intent of a statewide IPM Certification Program is to encourage voluntary participation through a variety of incentives ranging from advantageous marketing strategies (eco-labeling, preference in state procurement programs or special promotion campaigns) to regulatory or administrative efficiencies or economic benefits.

Furthermore, for such a program to succeed it must have a great deal of flexibility to take into account the differences between crops and the needs and abilities of individual landowners and growers. It would also require cooperation on the part of other state regulatory agencies, e.g. Air Resources Board, Air Quality Districts, State Water Resources Board, Regional Water Quality Control Boards, Department of Fish and Game, and California Department of Food and Agriculture.

Such a program could build off existing voluntary sustainable agriculture programs such as the California Sustainable Winegrowing Alliance and the "Code of Sustainable Winegrowing" or the Protected Harvest projects that include an integrated pest management component. It could be part of a broader, certified sustainable agriculture program, or part of the state's "Buy California" campaign.

4. **Recommendation:** Form a working group to develop and promote voluntary IPM certification programs.

## 2. Enhance DPR's Compliance, Education and Enforcement Programs

### A. Overarching Challenges and Recommendations

1. Coordination with other State Agencies, Boards and Departments: With the expanding urban interface and associated increases in pesticide use, there is increased need for DPR to coordinate its regulatory and enforcement activities to ensure consistency with the efforts by other state agencies such as the State Water Resources Control Board, the Regional Water Quality Control Boards, Air Resources Board and the Air Quality Districts.
   - **Recommendation:** Improve communications with and solicit input from appropriate state agencies early in the registration process to ensure their environmental and health standards will be satisfied.
2. Redefining DPR's Enforcement Policy: The working group supports an enforcement policy that emphasizes performance-based results. Some working group members raised concerns as to whether DPR's enforcement policy has an adequate process to ensure improved performance. Some members of the working group believe that DPR's current enforcement program generally does not provide adequate deterrence. (A $200 fine may be seen as merely a cost of doing business as opposed to a deterrent.)
   - **Recommendation:** Clarify and ensure consistent interpretation statewide of definitions of current classifications of administrative civil penalties.
   - **Recommendation:** Develop an education and communication program to ensure that the county agricultural commissioners, DPR's enforcement staff, the regulated community, farm workers and other affected community members understand how the enforcement program will be implemented.
   - **Recommendation:** Work with Natural Resource Conservation Service (USDA), county agricultural commissioners and University of California to improve education opportunities for licensees and other pesticide applicators regarding compliance with state laws and regulations.

- **Recommendation:** DPR should further audit county agricultural commissioners' outreach programs, including compliance, education and enforcement programs, to ensure statewide consistency in meeting performance goals.
- **Recommendation:** DPR should work with the counties and CDFA to improve timeliness of completion of pesticide investigations and related pesticide testing.
- **Recommendation:** Structure fines to ensure they adequately deter violations of the law.
- **Recommendation:** Focus DPR's and the county agricultural commissioners' enforcement resources on problem areas and issues of greatest concern to human health and safety and the environment.
- **Recommendation:** Focus on repeat offenders and serious violations. Increase administrative and licensing actions, and civil and criminal penalties for recidivist activities and serious violations.
- **Recommendations:** Identify opportunities for DPR and the county agricultural commissioners to promote IPM practices during the permitting process. Refer to the previous sections.
- **Recommendation:** Identify incentives for long-term compliance (e.g. extended timeframes for permits, fewer inspections for those with exceptional compliance records).
- **Recommendation:** Refocus the county agricultural commissioner and DPR reporting efforts to emphasize the nature of violations found and resultant compliance and enforcement actions taken. Ensure these reports are readily available to the public.

3. Limited Resources: Fiscal constraints on DPR and county agricultural commissioners limit compliance/enforcement results.
   - **Recommendation:** Evaluate and modify as necessary current licensing fees to ensure adequate funding for administrative and regulatory costs.

- **Recommendation:** DPR should evaluate the adequacy of the existing system to provide recourse for parties affected by pesticide violations.

4. Legislative Oversight
   - **Recommendation:** Evaluate DPR's enforcement reporting mechanisms to ensure adequate feedback is provided to the Legislature.
5. Water Quality: Increased focus is needed to prevent, detect and respond appropriately to impacts on water quality related to pesticide use.
   - **Recommendation:** Working with the water boards and other stakeholders responsible for water quality, improve procedures to ensure adequate consideration of known and potential water quality impacts are considered during the registration and re-registration processes
   - **Recommendation:** Improve coordination with the state and regional water boards to ensure the timely investigation, prevention and mitigation of water quality impacts discovered after a pesticide is registered.

**B. Challenges and Recommendations in the Urban/Residential Setting:** Given the increasing number of pesticide users in the urban/residential setting, the working group recognizes education and communication as the keys to a successful compliance/enforcement program. Readily available information and media communication that informs an urban party of his/her pest management options may minimize undesirable consequences. Furthermore, DPR should assess the allocation of its resources to take into account projected increases in urban populations and associated increases in urban pest management activities without compromising its compliance and enforcement efforts applicable to agricultural activities.

- **Recommendation:** Ensure adequate DPR and county agricultural commissioners' compliance, education and enforcement resources to address increasing urban/residential pesticide sales and use.

- **Recommendation:** Evaluate adequacy of compliance, enforcement and education efforts with regards to licensed urban pesticide use such as the maintenance gardeners.

## C. Challenges and Recommendations in the Agriculture-Urban/Residential Interface Setting

The rapidly expanding agriculture-urban/residential interface requires accurate and timely information to minimize the potential for adverse impacts associated with adjacent pest management activities. Such information also affords county agricultural commissioners more opportunities to interact proactively with the user to avoid such impacts and to ensure compliance.

- **Recommendation:** DPR, in cooperation with the county agricultural commissioners, should evaluate the current Pesticide Use Reporting System and identify opportunities to upgrade the system to provide more timely and precise information.

## D. Challenges and Recommendations in the Agricultural Setting

Many of the compliance/enforcement recommendations applicable to the agricultural setting are set forth in Section A. Overarching Challenges and Recommendations, pages 8-9.

Maintain a Safe Food Supply for California's Consumers: Fresh and lightly processed (e.g. frozen and dehydrated) foods produced outside California with lower food safety standards are increasingly available to California consumers.

- **Recommendation:** Ensure processes are in place and adequately funded to monitor Californians' food supply to ensure California safety standards for pesticide residues are met. This may require increased residue testing of foods, including lightly processed foods from other states and countries.